

## Nascent Academic Entrepreneurs' Venture Emergence: A Study in Critical Realism

**Bienvenido S. Balotro**

*De La Salle University*

bsbalotro@up.edu.ph

### Abstract

This explanatory multiple case study research on nascent academic entrepreneurs' venture emergence adapted critical realism as a research philosophy and methodological approach. The objective of the study was to provide a comprehensive explanation of the phenomenon of nascent academic entrepreneurs' venture emergence or successful venture creation of operational business ventures arising from academic research output by nascent academic entrepreneurs from four Philippine universities. Eight academic entrepreneurs from four universities: Manila Central University, Adamson University, University of the Philippines (Manila, Diliman, and Los Baños), and De La Salle University-Manila, were the subjects of the case study. The case study used key person interviews, site observation visits, description of product samples, and review of documents and secondary literature to gather data and information. Data analyses were done by applying a critical realist's three-step method of retrodution. The final output of the study was a theoretical framework that outlined a comprehensive explanation of the phenomenon of nascent academic entrepreneurs' venture emergence in the three domains of reality, namely: the empirical, the actual, and the real.

**Keywords:** academic entrepreneur, critical realism, nascent entrepreneur, venture creation, venture emergence

---

In our present economic environment, the ability to translate research findings into products and services through technology transfer and commercialization of research output is critically important. In this way, universities and other institutions of higher learning are expected to contribute to economic development through science and technology. The academic entrepreneurs, the faculty, and researchers in the academe, who were able to commercialize their research inventions are the major actors in this phenomenon.

At the forefront of this phenomenon are nascent academic entrepreneurs. Nascent academic entrepreneurs are the academic entrepreneurs starting business ventures arising from research inventions for the first time. The nascent entrepreneur has been described as pursuing an opportunity, i.e., a possibility to introduce new products or services, serve new markets, or develop more efficient production methods in a profitable manner (Casson, 1982; Shane, 2000)

It is interesting to follow the events leading to the emergence of a venture of an academic entrepreneur. It begins from the time that the academic entrepreneur aspires to bring his promising research output to the market to the time that he can operate and sell to the market. It is the time when the venture is most vulnerable that the nascent entrepreneur needs all the support that can be obtained from the government, the industry, and other institutions to be able to start the venture.

This research about the venture emergence of nascent academic entrepreneurs adapted critical realism (CR) as a research philosophy and methodology.

Critical realism (CR) adapts a realist ontology which posits that a “world exists independently of our knowledge of it” (Sayer as cited by Easton, 2010, p. 119; Miller & Tsang, 2010, p. 144). This implies that human knowledge captures only a small part of a deeper and vaster reality which is why CR deviates from both positivism and constructivism. Positivism limits ‘reality’ to what can be empirically known (e.g., through scientific experiments). The same critique applies to constructivist perspectives that view reality as entirely constructed through and within human knowledge or discourse.

CR ontological position is the basis of Bhaskar’s (1978) assumption of a stratified model of three interrelated domains of reality: the empirical, the actual, and the real. The domain of the empirical is the world of the human experience of events. At this level, events or objects can be observed through human experience and are interpreted with the aid of common sense. The domain of the actual refers to the level of social events which are the focal objects that critical realist research investigates (Easton, 2010). According to (Danermark et al., 2002, p. 20) “these are the events whether or not we experience or interpret them, and these true occurrences are often different from what is observed at the empirical level”. Finally, the domain of real is the level of causal structures and causal powers. These are the inherent properties in an object or structure that act as causal forces to produce events (i.e., those appearing at the empirical level). Events are the result of exercised generative mechanisms and causal powers embedded in a structure of entities in the domain of the real.

In CR terminology, entities has certain ‘causal powers’ which refer to “the things that an object can do, or more broadly, its potentials, capacities, or abilities to act in certain ways and/or to facilitate various activities and developments.” (Lawson, 1997, p. 21). Hence, water can extinguish a fire, and an entrepreneurial network can form the basis for a series of different ventures over time. Critical realists make use of the term ‘mechanisms’ to connote the ways that the causal powers of an object are exercised. These mechanisms are sometimes described as ‘generative’, in the sense that they can give rise to concrete phenomena, such as an event that we might experience. However, activation of causal powers is not automatic, because it is dependent on the presence of other conditions. As Sayer (2000, p. 58) stated, “a particular mechanism can produce completely different actions at a different time, and inversely, the same event can have a completely different cause.” A simple example to illustrate this is the case of two individuals who might have similar capacities to become successful entrepreneurs, yet due to differing conditions, they may end up differently. Causal powers and generative mechanisms are not necessarily observable; they exist irrespective of whether they have been exercised, detected, or become

manifested (Bhaskar, 1978). It is also possible that the causal powers and mechanisms are not exercised at all.

### **Methodology**

This is an explanatory multiple case study of the phenomenon of venture emergence of nascent academic entrepreneurs adapting critical realism as a research philosophy and methodology.

The phenomenon was examined in the critical realist's three domains of reality namely: the empirical, the actual, and the real. The result of the study was presented as a theoretical framework that gave a comprehensive explanation of the entrepreneurial event.

The unit of analysis of this holistic multiple case study was the phenomenon of nascent academic entrepreneurs' venture emergence. The structural entities, causal powers, and generative mechanisms were identified tentatively from prior knowledge obtained from literature review and a pilot study.

The multiple case study was conducted using semi-structured interviews of nascent academic entrepreneurs from four Philippine universities, and their technology transfer officers in the university. There were eight cases of academic entrepreneurs investigated in the study from four academic institutions, namely: Manila Central University, Adamson University, University of the Philippines (Manila, Diliman, and Los Baños), and De La Salle University-Manila. Additional research data and information were collected through site visit observations, description of product samples, and review of documents and secondary literature. The study utilized the critical realist's analytical method of retroduction. The scope of the period of the study was only during the process of the nascent academic entrepreneurs' conception of the idea of the venture to emergence. The study did not look into the sustainability of the business ventures established by the academic entrepreneurs.

### **Pilot Case Study**

A pilot interview was conducted before the main interviews of the academic entrepreneurs. The purpose of conducting the pilot study was to develop the empirical research questions and interview guides to be used in the study. Most importantly, the pilot study was done to test if the hypothetical framework can support initial beliefs about possible social structures, causal power/s, and generative mechanism/s that lead to the phenomenon being studied – venture emergence of the nascent academic entrepreneurs. This information was necessary to be able to pursue the research satisfactorily based on critical realist methodology.

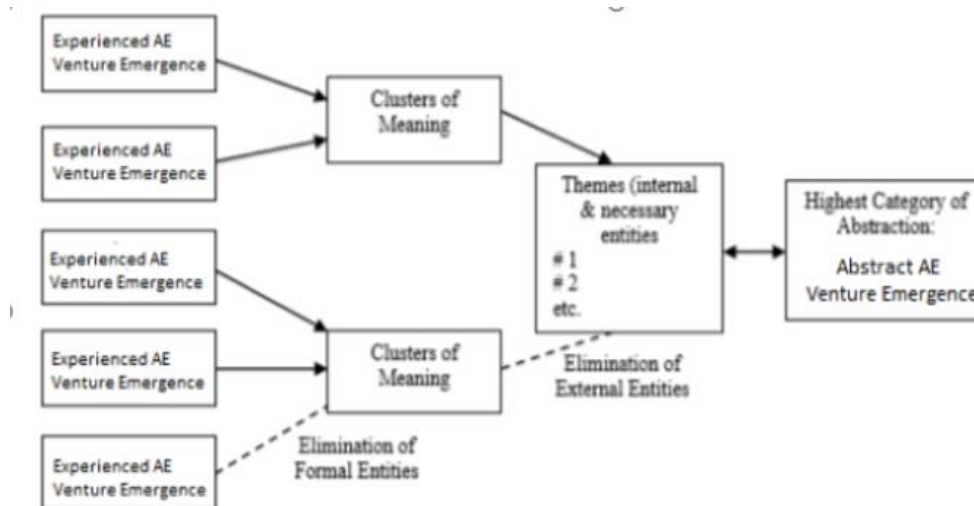
### **First Step: Explication of Events**

I applied the three-step critical realist research design to analyze the cases and develop the causal explanations of the phenomenon under study. It is an iterative process whereby each step of research affected the next step. The first step, the explication of events, included the description of the experiences of the academic entrepreneurs successful venture creation from: conception of

business venture, organization or start-up, and venture emergence. Next, the stories of the academic entrepreneurs' successful venture creation from conception to emergence as experienced social events were abstracted by distinguishing the internal and necessary themes from the external and formal themes obtained through comparing and contrasting the narratives across different cases. Refer to Figure 1. As a result of this step, the description of the phenomenon moved from the domain of empirical to the domain of the actual.

**Figure 1**

*The Process of Abstraction in the Study*



*Note.* Revised from Kempster & Parry (2011, p. 116)

## **Second Step: Retrodution**

### ***Hypothetical Causal Explanation of Academic Entrepreneurs' Venture Emergence***

The second step of retrodution is directed towards providing preliminary causal explanations of the phenomenon of nascent academic entrepreneurs' venture emergence. This step is linked to the pilot study that explored the potential existence of the social structures and causal power/s which led to the phenomenon or the social event. The pilot study and the literature review gave initial information used in retrodution for the identification of the structure, causal power/s, and generative mechanism/s associated with the occurrence of the event. Refer to Figure 2, the hypothetical framework of the study.

### ***Theoretical Propositions***

The following were the theoretical prepositions of the study:

1. Human capital (H1) which includes the general human capital attributes of education and experience and specific human capital attributes which includes but not limited to

entrepreneurial experience and industry experience is an inherent **causal power** that exists (in the domain of the real) of the phenomenon of nascent academic entrepreneurs' venture emergence.

2. Social capital (H2) in the form of industry linkages, entrepreneurial connections, relationships with technology transfer offices, international ties, network structures, and institutional support is a **causal power** that exists (in the domain of the real) of the phenomenon of nascent academic entrepreneurs' venture emergence.

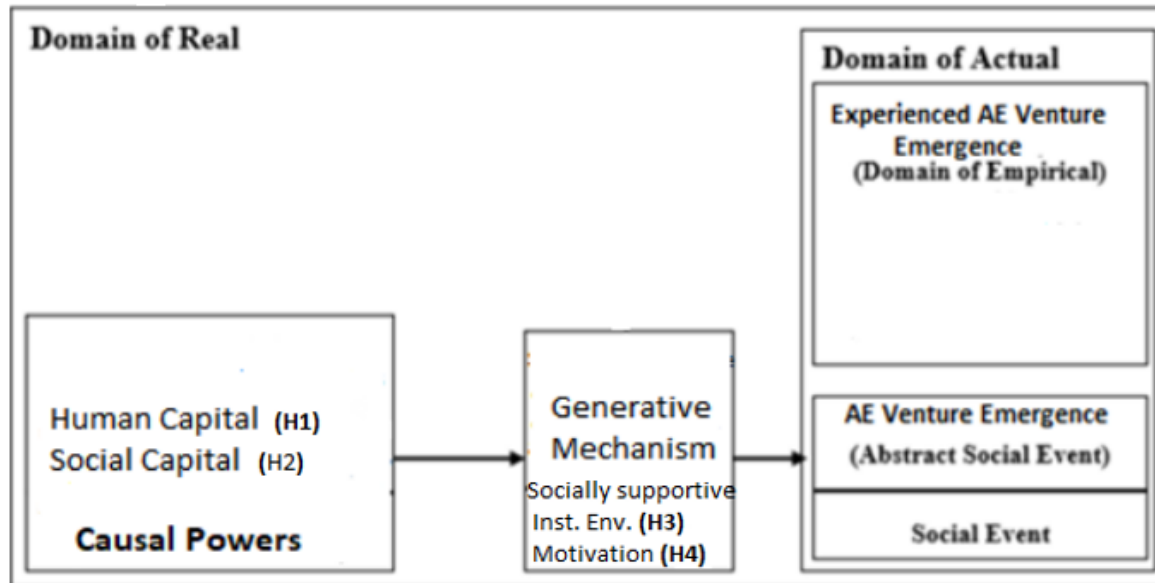
3. Socially supportive institutional environment (H3) enables nascent entrepreneurs to access important resources to create their businesses (Hopp & Stephan, 2012). According to the same authors, socially supportive institutional environments enables nascent entrepreneurs to succeed in their venture creation efforts on two key individual beliefs: entrepreneurs' motivation to work hard to create an operational venture (start-up motivation) and their confidence that they have the skills required to create an operational venture (entrepreneurial self-efficacy). Socially-supportive institutional environment is one of the **generative mechanisms** of the study.

4. Motivation (H4) has been related to the achievement of various start-up outcomes most notably the establishment of new firms (Renko et al., 2017). Motivation is considered an important factor that distinguishes nascent entrepreneurs who were able to establish an operating venture from those who were not and is also said to be the key to understanding why some nascent entrepreneurs quit the gestation process while others continue to establish firms. There was evidence from meta-analytic studies that suggests that the effects of specific personality traits and motivations (such as self-efficacy, achievement motivation, need for autonomy, innovativeness) on business creation and success are even stronger than the effects of more generic human capital variables such as education and various types of work experience (e.g. managerial, leadership, or entrepreneurship experience (Hopp & Stephan, 2012). Motivation is another **generative mechanism** considered in the study.

5. However, the real causal power/s and generative mechanism/s of the study were to be known by following the 3-step method of retrodution particularly upon completion of the method of empirical corroboration guided by prior knowledge, literature review, and information obtained from empirical data. Unlike in positivist studies where independent variables (inputs) lead to dependent variables (outputs), causal powers and generative mechanisms in critical realism do not act in the same manner to lead to an event. Rather, they operate in a more complex manner to result in the occurrence of a social phenomenon or lack of it.

**Figure 2**

*Hypothetical Framework of Academic Entrepreneurs' Venture Emergence in the Three Realms of Reality*



Note: Adapted from Hu (2018)

### ***The Selection of Theories***

The use of existing theories is essential in the retrodution process. Wynn & Williams (2012) stated that retrodution is a creative research process where researchers may develop or propose multiple theoretical explanations. Therefore, researchers must evaluate and compare the explanatory power of different theoretical explanations available to be able to select theories that may most accurately represent the domain of real in the study. This is described as judgmental rationality in critical realism (Bhaskar, 1998b).

The power of CR derives from its use of explanatory framework to assess competing scientific theories to arrive at plausible explanations to complex phenomena without closing the door to other possible explanations.

Following these guidelines and guided by my hypotheses, where I considered human capital and social capital as causal powers and socially-supportive institutional environments and entrepreneurial motivations are the generative mechanisms which led to the phenomenon of venture emergence, I adapted the theories of human capital, social capital, and motivation as applied to entrepreneurship studies.

### **Third Step: Empirical Corroboration**

This final step aims to ensure that the proposed selected mechanism/s adequately represent reality and have both sufficient causal depth and better explanatory power than an alternative

explanation for the focal phenomenon using the data from observations and experiences (Wynn and Williams, 2012).

Empirical corroboration is needed to overcome the tentativeness of inferences derived through retroduction by attempting to validate the existence of the proposed mechanisms. In critical realism (CR), the hypothesized mechanism is not only seen as a potential rationale linking cause to effect. CR also seeks to verify that the mechanism/s was sufficient to produce the observed effects, and that there is reason to believe that the retroduced mechanism was present (and possibly enacted) in the generation of the given phenomena (Wynn & Williams, 2012).

The task in empirical corroboration is to identify the mechanism which exists (Bhaskar, 1975). Validation of these knowledge claims include the empirical search for either the mechanism itself or its effects. This can be done by using data from empirical observations to assess the proposed causal explanations from two perspectives: first, confirming that the proposed mechanism is clearly and accurately described in terms of generating outcomes within the given context; and second, that it offers better explanatory power than other potential mechanisms that have been identified. Bhaskar describes this as the process “in which the reality of mechanisms postulated are subjected to empirical scrutiny” (1975, p. 15).

## **Research and Discussion**

### **Findings and Analysis – Explication of Events**

The findings in the explication of events addressed the first research objective that is to explain the phenomenon of nascent academic entrepreneurs’ venture emergence in the domain of the empirical and the actual.

Under explication of events, the profiles of the eight nascent academic entrepreneurs and the business ventures arising from their research inventions were obtained. The stories of the ventures of each of the academic entrepreneurs from the conception of their ventures, organization of the venture, and eventual emergence were also gathered.

For the abstraction of academic entrepreneurship experiences, I used the method of comparative case analysis approach guided by critical realist grounded theory process, as suggested by Kempster & Parry (2011). This method of abstraction, as applied to critical realist methodology, involves comparing and contrasting data per entrepreneurial stage from conception of venture, organization, to venture emergence guided by prior knowledge, references from the literature, and analysis of collected information. As a result, I identified three internal and necessary entities as the essential constituents corresponding to each entrepreneurial stage from conception of business venture, organizing the venture, and venture emergence namely: research, venture creation, and customer orientation and institutional linkages, respectively.



**Table 1A**

*Profile of Academic Entrepreneur's Business Venture*

Nature of Business	Bioprocess-Microbial Based Manufacturing	Envigor	Manila Health Tek, Inc.	Fish-I
Business address	San Miguel, Calumpit, Bulacan	Adamson U.	Marikina City	Computer Science UP Diliman
Plant site/factory	San Miguel, Calumpit, Bulacan	Tanauan, Batangas	Marikina City	N.A.
Organization	Single Proprietorship	Spin-off corporation	Spin-off corporation	Spin-off corporation
Number of employees	8	10	100	4
Product/s	microbial based-products for farm animals	waste- water treatment-chemicals	Lab-a-mug diagnostic kits	Hardware-software technology for rapid reef assessment

**Table 1B**

*Profile of Academic Entrepreneur's Business Venture*

Nature of Business	O'Mark Enterprises	NYFTI, Inc	SENTI-AI, Inc,	Midens
Business address	Science Park, UPLB	Ermita, Manila	QBO Innovation hub, Makati	Canlubang, Laguna
Plant site/factory	Science Park	Ermita, Manila	N.A.	Canlubang, Laguna
Organization	Single proprietorship	Corporation	Corporation	Corporation (propose)
Number of employees	20	5	20	N.A.
Product/s	virgin coconut oil	folding bikes	Sentiment analysis products and services	Robotic exoskeleton for stroke and injury rehabilitation



## Empirical Corroboration – Findings and Analysis

This chapter presents the findings from the empirical corroboration of the research methodology. This part of the study discussed the causal powers and generative mechanisms that are in the domain of the real that leads to the event, the venture emergence of nascent academic entrepreneurs.

In the language of critical realism, the nascent academic entrepreneur, was the entity who operated in the social structure (e.g., in the university or academic setting and later on in his firm environment). The academic entrepreneur possessed the causal powers (human capital and social capital) that brought about the generative mechanisms in our model that led to the phenomenon or social event of venture emergence. The human capital of the academic entrepreneurs in the study consists of the general human capital (education and work experience) and specific human capital (entrepreneurial, technical, and managerial capabilities) that were developed by the academic entrepreneur through education, training, and experiences. The social capital of the academic entrepreneurs in the study consisted of linkages with their universities, government agencies, industry connections, and institutional support.

But according to critical realist philosophy, what gives rise to an event is not solely the combination of human capital and social capital but also the generative mechanism/s. In the case of venture emergence (the event) in the study, I hypothesized that one of the generative mechanisms was entrepreneurial motivation, the motivation of the academic entrepreneurs to start-up and succeed in their ventures. This premise is supported by literature as individual motivation has been related to the achievement of various start-up outcomes most notably the establishment of new firms (Renko et al., 2012). Motivation is considered an important factor that distinguishes nascent entrepreneurs who were able to establish an operating venture from those who were not. Based on the cases of the academic entrepreneurs in the study, the source of motivation of the academic entrepreneurs were not only due to their entrepreneurial traits (risk taking, locus of control, entrepreneurial self-efficacy) but as influenced by perceptions of the probable outcomes of their venture and personal expectations.

Another generative mechanism I was able to establish in the study was socially supportive institutional environments. Socially supportive institutional environments resulted from the collaborative atmosphere created by institutions working to assist academic entrepreneurs to enable venture emergence. Empirical evidence from the narratives of the nascent academic entrepreneurs corroborates the proposed theoretical framework. The causal factors (causal powers and generative mechanisms) found in the narratives of the cases were represented in the theoretical framework.

The diagram in Figure 3 is the theoretical framework of venture emergence in the realm of the real.

## Conclusion

This research explained the phenomenon of nascent academic entrepreneurs' venture emergence by applying critical realism as a research philosophy and methodological approach. Using the experiences of eight nascent academic entrepreneurs from four Philippine Universities as the main source of empirical data, a theoretical framework was developed that explains the phenomenon of venture emergence of academic entrepreneurs in the three domains of reality, namely: the empirical, the actual, and the real.

The study contributed to a comprehensive understanding of venture emergence or the creation of operational ventures of nascent academic entrepreneurs from higher educational institutions in the country.

Applying the first step in critical realist methodology-explication of events, I was able to address the first and second research objectives to explain the phenomenon of venture emergence of nascent academic entrepreneurs in the domain of the empirical and the actual.

In explaining the phenomenon of venture emergence of nascent academic entrepreneurs in the domain of the empirical, I described the entrepreneurial journey of the nascent academic entrepreneurs from the conception of venture ideas from their research inventions, the organization of the ventures, to the eventual emergence or successful creation of the operational ventures.

Part of the explication of events in the critical realist methodology is the abstraction of the event, the nascent academic entrepreneurs' venture emergence. This step required comparing and contrasting the narratives from the cases from within and across each entrepreneurial stage from the conception of the business venture, organization of the venture, to venture emergence guided by prior knowledge, references from the literature, and analysis of the collected information. As a result, I identified three internal and necessary entities as the essential constituents corresponding to the three entrepreneurial stages: conception of the business venture, organization of the venture, to venture emergence. These three internal and necessary entities were research, venture creation, and the academic entrepreneurs' linkages including customer ties, respectively.

This leads to the next and final step of the critical realist research methodology, which is empirical corroboration. This step elaborated on the causal powers and generative mechanisms that led to the event, venture emergence of the nascent academic entrepreneurs which are found in the domain of the real. This step answers the third and last objective of the study.

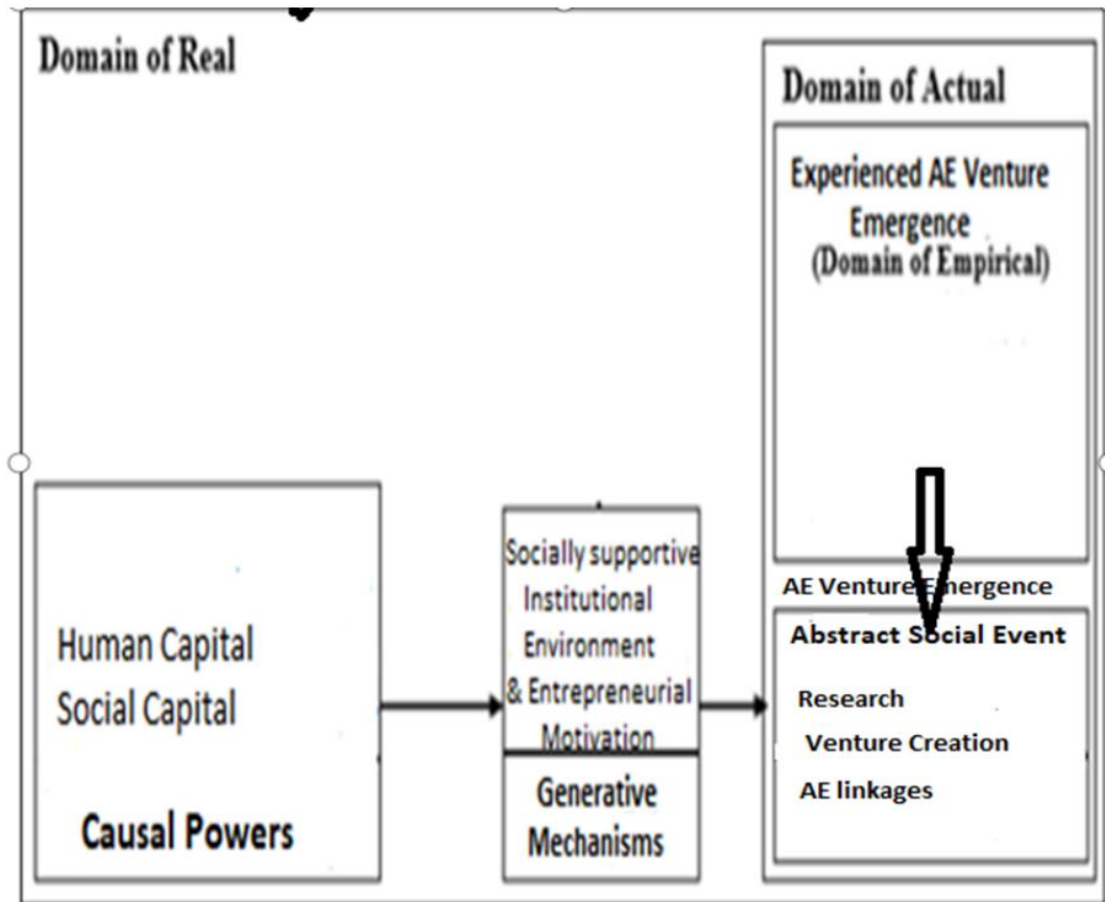
I posited that the causal powers are the human capital and social capital of the academic entrepreneurs. The human capital of the academic entrepreneurs in the study consists of the general human capital (education and work experience) and specific human capital (entrepreneurial, technical, and managerial capabilities) that were acquired by the academic entrepreneur through their education, training, and experiences. The social capital of the academic entrepreneurs in the study includes their linkages with their universities, government agencies, industry connections, and institutional support. One important linkage of the academic entrepreneur was their relationship with the university through the technology transfer offices.

But according to critical realist philosophy, what gives rise to an event is not solely the combination of human capital and social capital but the generative mechanism/s. In the case of venture emergence (the event) in the study, I proposed that one of the generative mechanisms was entrepreneurial motivation, the motivation of the academic entrepreneurs to create and succeed in their ventures. This premise is supported by literature as individual motivation has been related to the achievement of various start-up outcomes most notably the establishment of new firms (Renko et al., 2012). Motivation is considered an important factor that distinguishes nascent entrepreneurs who were able to establish an operating venture from those who were not. Based on the narrative of the cases of the academic entrepreneurs in the study, the sources of motivation of the academic entrepreneurs were their entrepreneurial personality traits (risk taking, locus of control, entrepreneurial self-efficacy), personal goals, expectations, and business ideas.

Another generative mechanism I was able to establish in the study was the socially supportive institutional environment. Socially supportive institutional environment resulting from the collaborative atmosphere created by institutions working to assist academic entrepreneurs to enable venture emergence. Its impact was through specific personality traits related to (e.g., startup motivation and entrepreneurial self-efficacy).

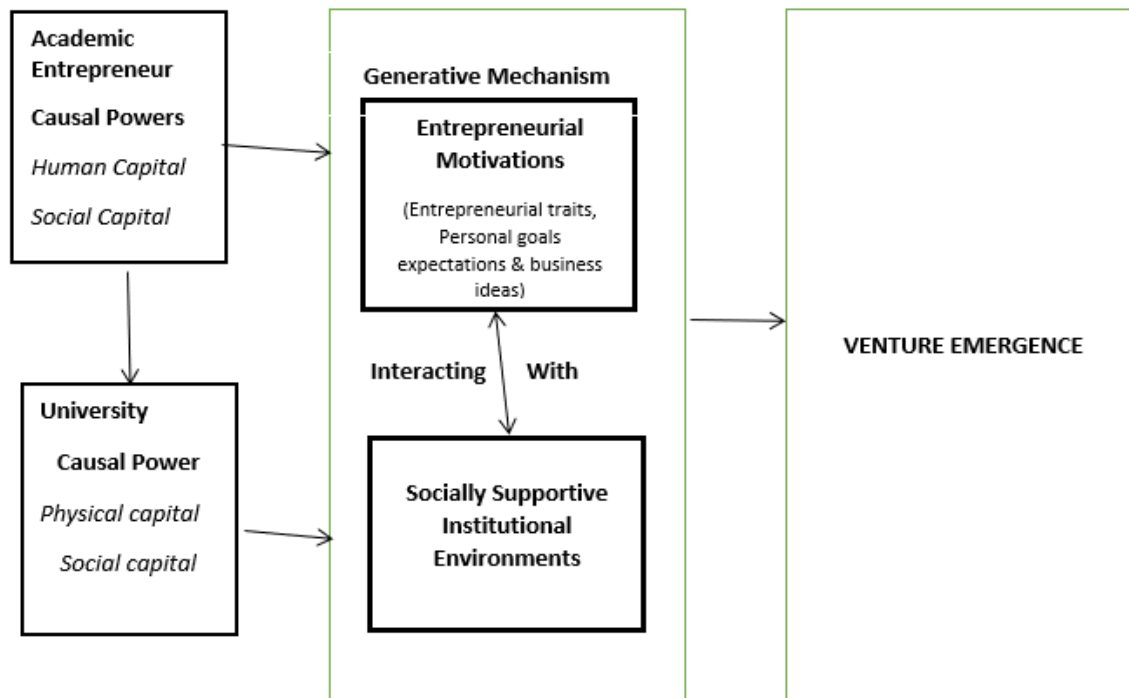
**Figure 3**

*Theoretical Framework of Venture Emergence in the Three Realms of Reality*



**Figure 4**

*Theoretical Framework of Venture Emergence in the Realm of the Real*



### Research Implications

Considering the research contributions and limitations, this study has clear implications for future research in academic entrepreneurship.

First, the causal powers and generative mechanisms revealed in the data call for a greater focus on the importance of human and social capital, the significance of socially-supportive institutional environment, and the place of entrepreneurial motivation in understanding academic entrepreneurship. The findings showed that venture emergence was the result of the motivation mechanism derived from nascent academic entrepreneurs' human and social capital. Socially-supportive institutional environment another generative mechanism identified in the study is also a product of social capital that acted indirectly through entrepreneurial self-efficacy and start-up motivation. These findings echo the argument that opportunities result from the interaction and negotiation between the academic entrepreneur and other actors in the social structure (Venkataraman et al., 2012). In this sense, venture emergence should be treated in future researches as the result of the collective agency and not only of an individual effort.

Second, this study calls for further studies to address its limitations. Critical realism does not seek for generalization as there will always be alternative explanations in an open system like the social world (Sayer, 1992). Further investigation into these alternative explanations may still

enrich our understandings of venture emergence of the academic entrepreneurs, thereby opening up new research opportunities for entrepreneurship researchers. Although the explanatory framework obtained in this study was based on academic entrepreneurs' venture emergence in selected Philippine universities, it can be used as an initial framework for a broader study on academic entrepreneurs' venture creation to improve understanding of this phenomenon. The mediating and moderating conditions of the generative mechanism/s should be identified in succeeding studies. The study focusing on how academic entrepreneurs establish ties with customers during the process of venture creation while establishing linkages with socially supportive institutions is another unexplored area of study in academic entrepreneurship.

Third, this study offers insights to researchers, policymakers, and practitioners on how academic entrepreneurship can be nurtured in our academic institutions. Researchers might benefit from understanding how ventures emerged in the universities and used this knowledge to better assist nascent academic entrepreneurs. Policymakers might find this study helpful in understanding the difficulties that academic entrepreneurs encounter to improve the policy environment for them such as by providing more funding opportunities and cutting the bureaucratic red tape involved in government transactions. These steps will mean a lot for academic entrepreneurs.

Fourth, the proposed theoretical framework can serve as the basis of an assessment checklist of the capacity of academic entrepreneurs to create operational ventures from their research output. This checklist can be used to gauge the weakness/strength of the academic entrepreneurs in terms of human capital, social capital attributes, entrepreneurial traits, personal expectations/ambitions, and business goals. The stronger the human capital and social capital attributes, entrepreneurial personality traits, motivation, and support of socially supportive institutions to the nascent academic entrepreneur, the higher the likelihood the AE can create operational ventures. An example for the basis of this checklist is found below:

*General human capital (Overall education and work experience)*

Narrow -----Broad

Shallow ----- Deep

*Specific human capital (managerial and entrepreneurial experience)*

Narrow----- Broad

Shallow ----- Deep

*Social capital-collaboration with (University, Government research funding agencies,  
Non-government organizations, companies, customers)*

Weak ----- Strong

Dependence to the University

Low ----- High

*Sources of Motivations*

Entrepreneurial traits (risk taking, locus of control, self-efficacy)

Weak ----- Strong

*Personal expectations and business goals*

Contented ----- Ambitious

*Socially-supportive institutional environments*

Absent ----- Present

Fifth, the study resurfaced the old inquiry whether entrepreneurs are born or made. In particular, are nascent academic entrepreneur a product of nature, of their DNA, or a product of nurture of the institutions where they came from. This is an interesting line of inquiry in relation to examining the entrepreneurial traits of nascent academic entrepreneurs whether these individual attributes are acquired by nature or nurtured.

Finally, I attribute the result of this research to the use of critical realism as my research methodology and philosophy. Critical realism provides unique and great explanatory power for the study of complex social events in entrepreneurship and general management. I hope this research will inspire other researchers to adopt critical realism for research topics that require an in-depth and comprehensive explanation.

### References

- Bhaskar, R. (1978). *A realist theory of science*. Harvester Press.
- Bhaskar, R. (1998). *The possibility of naturalism: A philosophical critique of the contemporary human sciences* (3rd ed.). Routledge.
- Blundel, R. (2007). *Critical realism: A suitable vehicle for entrepreneurship? Handbook of qualitative research methods in entrepreneurship* (pp. 49-74). Edward Elgar Publishing. <https://doi.org/10.4337/9781847204387>
- Carter, N.M., Gartner, W.B., & Reynolds, P.D. (1996). Exploring start-up event sequences. *Journal of Business Venturing*, 11(3), 151-166. [https://doi.org/10.1016/0883-9026\(95\)00129-8](https://doi.org/10.1016/0883-9026(95)00129-8)
- Casson, M. & Giusta, M. D. (2007). Entrepreneurship and social capital: analysing the impact of social networks on entrepreneurial activity from a rational action perspective. *International Small Business Journal*, 25(3): 220-244. <https://doi.org/10.1177/0266242607076524>
- Danermark, B., Ekström, M., Jakobsen, L., & Karlsson, J. C. (2002). *Explaining society: Critical realism in the social sciences*. Routledge. [https://www.researchgate.net/publication/271506641\\_Explaining\\_Society\\_Critical\\_Realism\\_in\\_Social\\_Sciences](https://www.researchgate.net/publication/271506641_Explaining_Society_Critical_Realism_in_Social_Sciences)
- Estay, C., Durrieu, F., & Akhter, M. (2013). Entrepreneurship: From motivation to start-up. *Journal of International Entrepreneurship*, 11(3), 243-267. <https://doi.org/10.1007/s10843-013-0109-x>
- Gartner, W.B. (1985). A conceptual framework for describing the phenomenon of new venture creation. *The Academy of Management Review*, 10(4), 696-706. <https://doi.org/10.2307/258039>
- Hopp, C. & Stephan, U. (2012). The influence of socio-cultural environments on the performance of nascent entrepreneurs: Community culture motivation, self-efficacy, and start-up success. *Entrepreneurship & Regional Development*, 24(9-10), 917-945. <https://doi.org/10.1080/08985626.2012.742326>
- Hu, X.R. (2018). Methodological implications of critical realism for entrepreneurship research. *Journal of Critical Realism*. <https://doi.org/10.1080/14767430.2018.1454705>

- Kempster, S. & Parry, K. W. (2011). Grounded theory and leadership research: A critical realist perspective. *The Leadership Quarterly* 22(1), 106–120.  
<https://doi.org/10.1016/j.leaqua.2010.12.010>
- Renko, M. & Freeman, M.J. (2017). How motivation matters: Conceptual alignment of individual and opportunity as a predictor of starting up. *Journal of Venturing Insights*, 8, 56-63. <https://doi.org/10.1016/j.jbvi.2017.06.003>
- Sayer, A. (2000). *Realism and social science*. Sage.
- Shane, S. (2003). *A general theory of entrepreneurship*. Edward Elgar.
- Wynn, D. Jr. & Williams, C. K. (2012). Principles for conducting critical realist case study research in information systems. *MIS Quarterly*, 36(3), 787-810.  
<https://doi.org/10.2307/41703481>
- Yin, R. K. (2014). *Case study research design and methods*. Sage Publications, Inc.